THE RELATIONSHIPS BETWEEN SOVEREIGN COUNTRY RISK RATINGS, GOVERNANCE, ECONOMIC PERFORMANCE AND DOMESTIC INVESTMENT: MANAGERIAL AND POLICY LESSONS FROM POLAND AND SOUTH AFRICA

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Abstract: The relevance of sovereign country risk ratings has become essential for investment and governance management and policy. Risk rating agencies are critical players in financial and risk markets. This paper analysed the relationships between risk ratings, governance, economic performance and investment, based on a comparative analysis between Poland and South Africa. These two countries have taken different developmental paths as developed and developing countries, respectively. The study adopted a quantitative research approach using data from 1994 to 2021. The analysis entailed a descriptive and econometric analysis for both countries. The findings reveal significant differences between the two countries. Poland performed more efficiently than South Africa, which performed at approximately only 43% of that of Poland in 2021 and only 73% over the study period. Long-run relationships were estimated, with the formulated risk rating index as the dependent variable. The coefficients in the South African long-run model were much higher than in the case of Poland. In the case of Poland, the level of government debt had the highest impact on the dependent variable, while in the South African case, the level of GDP growth had the highest impact. The novelty of the paper is embedded in the unique combination of governance, risk management and economic variables. The results suggest that management with good governance, economic performance and the level of investment significantly impact countries' sovereign risk rating indexes. Policymakers need to ensure high levels of management, good governance, and government debt management. In addition, policy certainty must be ensured to attract investment by facilitating stable risk ratings.

Keywords: economic performance; good governance; investment; Poland; sovereign risk rating; South Africa

Introduction

The importance of all types of risk ratings, especially sovereign risk ratings by global risk rating agencies, has increased over the last two decades (Hoti and McAleer, 2004). Most countries depend on investment for development, especially developing or emerging economies (Krammer, 2010). High levels of risk repel investment, while low levels of sovereign risks allow for easy access for such governments to obtain loans and attract investment (Schnitzer, 2002). The attraction of investment is critical

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for the growth and development of any economy (Kruger et al., 2020; Asongu et al., 2018; Meyer et al., 2017; Epaphra and Massawe, 2016).

An essential component in financial, risk and investment portfolios are sovereign credit ratings, also known as sovereign risk ratings. Sovereign risk ratings can be defined as assessing a government's ability and willingness to service its debt on time and in full (Bissoondoyal-Bheenick, 2005).

Fitch Ratings (2022) rated South Africa at 'BB-' with a stable outlook, indicating a non-investment grade for international investors. Standard and Poor's lists South Africa's sovereign credit rating at BB-, with a positive outlook. In addition, South Africa has a Ba2 rating, as assessed by Moody's, with a stable outlook. Lastly, the credit rating Fitch is BB-with a stable outlook (TradingEconomics, 2022). This poor rating is mainly due to high and still rising government debt, low growth and high levels of inequality. Positive indicators are recent good performance on fiscal revenues and the government's renewed efforts to keep expenditure under control for debt stabilization. Other negative outlook factors are electricity load shedding with accompanying debt by Eskom, which affects GDP growth and growth potential, and the growing public sector wage bill and social welfare subsidies.

For Poland, Standard and Poor's allocated a rating of A-, with a stable outlook, while Moody's allocated a rating of A2, with a stable outlook. Lastly, Fitch's rated Poland at A- (TradingEconomics, 2022). Poland's high ratings are supported by a well-diverse economy, with a sound macroeconomic policy framework and lower public debt levels than rated peers'. This is balanced against lower governance indicators and income levels than the 'A' median. The stable outlook indicates expectations that the Polish economy will remain resilient to external shocks and growing macroeconomic challenges due in part to a stable fiscal position and an improved external balance sheet. In addition, Poland appears less exposed than many countries in the EU to energy shortages as a result of the Ukraine-Russian conflict, due mainly to increased infrastructure investment in recent years. The country was cut off from Russian gas in April, with no visible effect on supply (due to demand seasonality). New and expanded interconnections with neighbouring countries, almost total storage capacity (which provides around 15% of the total annual consumption of 20 billion cubic meters) and the projected opening in October of a new 10bcm pipeline to Norway (around the same amount as was previously imported from Russia) will support supply over the next couple of years.

In conclusion, the study aims to assess the impacts and relationships between the leading economic, governance management and investment factors influencing sovereign risk ratings. This study is novel as it compares a well-performing developed economy (Poland) with a struggling emerging economy (South Africa). Therefore, this study fills the literature gap by investigating the impact of various vital factors on the sovereign credit rating agency's decisions.

Literature Review

According to the Corporate Finance Institute (2022), sovereign credit ratings, formulated by the three leading rating agencies, Fitch, Moody's and Standard and Poor, are critical for especially developing countries that require access to the international funds bond market. These credit rating agencies do country government evaluations regularly and allocate ratings between AAA grade, the highest rate, to grade D, the lowest rate. Evaluations are based on several criteria but usually focus on economic and political stability factors. Countries with high sovereign credit ratings have easy access to the international bond market and could attract FDI more easily than countries with low credit ratings. Countries with low ratings have higher possibilities of defaulting on debt. Since the inception of risk ratings, more than 70 countries have been defaulting on both foreign and domestic debt. A credit rating is a critical requirement for a country to meet as part of its international portfolio for investors (Fatnassi et al., 2014). A credit rating below the investment grade is problematic as foreign investors cannot invest in countries with such credit ratings (Mugobo and Mutise, 2016). According to the Corporate Finance Institute (2022), a sovereign credit rating is defined as an overall evaluation of a country's creditworthiness. It is an indication of the level of risk of repayment when lending money to a specific government.

Many factors are considered when a country's credit rating is determined. These factors could include GDP and GDP per capita; inflation; government debt to GDP ratio; and governance factors (Mellios and Paget-Blanc, 2006). This research paper aims to assess the impact of various factors as listed on the sovereign risk rating of a country comparing Poland and SA. Economic and investment factors are mainly the reasons behind changes in credit ratings (Hanusch et al., 2016). But on the other hand, credit ratings can also be seen as essential to stimulate investments for economic growth and development (Boumparis et al., 2017). An analysis of the literature points clearly to the avoidance of risk rating downgrades to non-investment grades (Hanusch et al., 2016). Globally, investors are required to invest in investment-grade sovereign securities. Thus, a good and stable sovereign credit rating is vital for attracting investment.

The study's theoretical foundation is based on the Liquidity and Economic Runs theory. This theory proposes that investors make strategic decisions about where to invest. They will move their investment away from countries with poor investment and economic fundamentals where the risk for investment is just too high (Devenow et al., 1996). Scholars such as Mutize and Mugobo (2018) and Emara et al. (2018) indicate that sovereign credit rating, as formulated by risk rating companies, is regarded as one of the essential fundamentals for consideration by investors.

Several empirical studies have investigated sovereign credit ratings and the relationship and impact of various macroeconomic variables. The study by Cantor and Packer (1996) assessed sovereign risk ratings and the relationships with various factors for 49 countries. Results from the study indicated that GDP, economic

development, government debt, the history of default, inflation, and per capita income level significantly impacted sovereign credit ratings.

Many studies followed the Cantor and Packer (1996) study, such as the studies by Asongu et al. (2018); Bayar and Kilic (2014); Bissoondoyal-Bheenick (2005); Le et al. (2023); Derado (2013); and Mellios and Pagent-Blanc (2006) have identified a range of possible variables which do impact and is impacted on by risk ratings including GDP and GDP per capita, openness to trade, foreign exchange effects, labour costs, investment and infrastructural development, FDI inflows, indicators of good governance and political risk as predictors of outcomes of sovereign credit ratings.

The empirical assessment of previous studies is developed logically to assess the various important elements that impact the risk rating of a country. In this process, the discussion of impacts will flow from economic impacts such as GDP and GDP per capita; to government debt levels to good governance and investment levels. Chen et al. (2016) analysed the relationship between sovereign risk rating changes and GDP from 1982-2012. The findings indicate that a one-notch upgrade in the credit rating (risk improvement) could lead to a 0.6% increase in GDP growth through the flow channels of capital investment and interest rates. In addition to the risk rating – economic growth nexus, the government debt component is also vital in the risk rating process. Chiu and Lee (2017) assessed the impact of public debt on economic growth, also considering country risk rating for 61 countries in a panel data methodology. The interesting results show different debt-growth nexuses under the different degrees of sovereign country risk. Countries in high-risk environments show evidence that economic growth is negatively affected by increasing public debt with rising risk ratings. Countries have different debt environments and levels, impacting the debt-growth nexus. Afonso, Gomes and Rother (2011) also assessed the economic determinants of sovereign debt credit ratings from 1995 to 2005. The results indicate that changes in economic performance, GDP per capita, and government debt impact a country's sovereign risk rating in the short run. In the long run, country risk ratings are affected by good governance, foreign reserves, external debt, and the history of defaults.

Moving to the combined impacts of economic and governance impacts, Meyer (2021) assessed the relationships between country risk ratings, economic growth and good governance in the Visegrád four region. Before investors invest in a specific region, they assess the environment and the level of risk. A quantitative research methodology was used with time-series data from 1996 to 2019. Findings from the study indicate that good governance (coefficients of between 0.02 to 0.15) and economic performance (coefficients between 0.17 to 0.31) significantly impact the level of sovereign risk. Lastly, the Granger causality estimations results show that both independent variables cause changes in the sovereign risk rating indexes, with causality running from good governance to increased economic growth. This study provides clear evidence that a lower risk index is important to attract investment, and good governance is also an important factor.

Ozturk (2016) studied the relationships between sovereign credit ratings and governance. The results and findings indicate that improved governance, using the six different World Bank Governance Indicators, is associated positively with higher sovereign credit ratings. The results indicate that risk rating agencies monitor the quality of governance when risk ratings and indexes are calculated. Sehgal, Mathur, Arora and Gupta (2018) investigated the sovereign risk ratings for India as determined by Moody's, Standard and Poor's (SandP) and Fitch. The study found that economic growth, inflation and good governance indicators are important predictors of sovereign risk ratings. This is followed by political stability, fiscal policy and stability, and the quality and size of the banking system. Chen and Chen (2018) analysed the quality of government institutions (good governance) and the relationship between sovereign credit risk ratings and the likelihood of sovereign debt default. The authors found that both economic and governance factors significantly adversely affect sovereign credit default. Results from this study indicate that sound quality governance leads to higher levels of ability and willingness to meet the repayments of debt.

In the last section, the role and impact of investment are added to economic performance and management impacts. Datz (2004) assessed the role and relationship of economic development and good governance through accountability with sovereign credit ratings in developing countries. Risk ratings are influential in assessing the investment environment but are also important for policymakers in developing countries to ensure the implementation of policies to reduce the country's sovereign risk. Irani et al., (2022) assessed Turkey's tourism sector from 2000 to 2017 by analysing the relationships between sovereign risk ratings, policy uncertainty, and macroeconomics. The results confirm that increased political instability, low economic growth, policy uncertainty and the exchange rate relate to improved risk ratings (Chau and Oanh, 2023).

Erdem and Varli (2014) assessed the impacts of sovereign credit ratings and the relationships with macroeconomic factors in emerging markets. Sovereign credit ratings are barometers for a country's economic, financial and political environments. High ratings are important for obtaining developmental capital and attracting investments in emerging markets. The results indicate that the following economic factors impact the risk rating most: Current account, GDP growth, GDP per capita, Governance Indicators and Reserves/GDP. The modelling predicted these variables up to 93% of all credit rating levels. Glova, Bernatik and Tulai (2020) investigated the effects of political and economic factors on country risk ratings in EU countries using panel regression. Conclusions from the study are that economic performance, GDP per capita, and other economic indicators such as employment levels, inflation, government debt, level of investment and good governance are the main factors influencing country risk.

Meyer and Mothibi (2021) assessed the influence of decisions by risk rating agencies on economic performance and investment in South Africa using a quantitative research approach from 1994Q1 to 2020Q2. The results indicate significant

relationships between economic performance, the level of the country's risk rating index, exchange rate, FDI, domestic investment and interest rates. In addition, bi-directional causality was also estimated between GDP and the country risk rating index and between the risk rating index and FDI. The study results show that stimulating economic growth and investments are critical and impact the country's risk ratings index.

Maphutha (2018) analysed and compared South Africa and Nigeria regarding important determinants for investment spending from 2003 to 2015. The study included the following determinants: the prime interest rate, inflation, exchange rate, GDP, levels of savings, trade openness and country risk ratings. The study indicates a positive long-run relationship between investment spending and the interest rate and GDP, while the other variables have negative impacts. In the Nigerian case, interest rates, savings, GDP, trade openness, and country risk ratings have long-run impacts on domestic investment. GDP was the only determinant that impacted the short-run for both countries.

Also, the following studies investigated the relationships between good governance or institutional quality and economic factors such as investment and economic growth. Corradini (2021) explored the relationship between institutional quality and economic growth in various Italian regions from 2004 to 2012. The results confirm that quality institutional institutions could spur economic growth. Huynh, Nguyen, Nguyen, and Nguyen (2020) investigated the linkages between FDI, the shadow economy and institutional quality. The study included 19 developing countries in Asia from 2002 to 2015. Interesting results indicate that institutional quality attracts inward investment (FDI), while FDI could even improve institutional quality. Hayat (2019) states that institutional quality is critical to accelerated economic growth and investment. A total of 104 countries were included in a dynamic panel data analysis. The research provides evidence that FDI inflows and institutional quality cause accelerated economic growth in developing countries but not in the case of developed countries.

In conclusion, from the literature review, many factors affect rating agencies' decisions. However, the most important factors are good governance, economic performance and the environment for investment. Countries should strive to achieve high-risk ratings as this will allow for ease of loans for capital investment and attract foreign and domestic investment. This will ultimately lead to a higher level of economic growth and development. The primary research question to be addressed: What are the main factors affecting the sovereign credit rating agency's decisions regarding a developed and a developing country.

Research Methodology

The methodology of this study is based on the functionalist theoretical paradigm, utilizing quantitative methods. The study's objectives are achieved using an econometric model, testing the relationships between a risk rating agency index and the level of governance, economic development and domestic investment. The study

is also based on a comparative analysis of two countries in different regions, Poland and South Africa. These two countries were selected as both emerged from undesirable government systems, Poland from communism and SA from a system of undemocratic separate development at the beginning of the 1990s. The two countries have followed different growth paths over the last three decades. SA is a proxy of a well-governed democratic developing country in Africa, while Poland is now a leading European country with a well-managed government system. This study's outcomes are important as it could assist both developed and developing countries in better understanding the relationships between the risk ratings and governance and economic factors. Table 1 provides a summary of all the variables included in the study. All variables were converted into natural logarithms to simplify reporting of results and minimize the possibility of any variance within the dataset. Stationarity testing of variables was used to determine the econometric methods and processes used in the study. The options for the econometric analysis were between the Johansen cointegration model and the Autoregressive Distributed Lag (ARDL) model as developed by Pesaran et al., (2001). Test results from the unit root tests indicated a mixture of stationarity; therefore, the ARDL model was selected as the most suitable for this study.

Both descriptive and advanced econometric time series data analysis were included. An (ARDL) model was used to estimate the long and short-run impacts of governance, economic development and domestic investment on sovereign credit ratings. The study is a comparative analysis between Poland and South Africa. Granger causality tests were also used to evaluate the existence of any causality between the variables. A risk rating index was developed from the ratings by risk rating agencies Fitch, Moody's and Standard and Poor. This process included equally weighted values from 1994 to 2021 from the three risk rating agencies. The risk ratings were transformed into numerical scores from the risk rating agency grades, which range from the highest risk rating of "AAA" to the lowest rating of "D". Numerical values were assigned on a linear scale for each of the rating grades, from 20 for "AAA" to 0 for a "D" rating (Meyer and Mothibi, 2021). Secondary data used in the study were collected from the World Bank Governance Indicators (2022), the World Bank Development Indicators (2022) and the World Government Bonds (2022). The data period as selected starts from 1994, the period after the end of communism in Poland and excludes the period of apartheid from the South African economic environment.

Table 1. Summary of variables included in the study

Variable	Abbreviations (log format in brackets)	Role of the variable and anticipated impact
Risk rating Index	RRI (LRRI)	The dependent variable, a higher index, means that overall, the three risk rating agencies are positive about the country's sovereign risk.
Government Debt (as % of GDP)	GOVDT (LGOVDT)	This includes all domestic and foreign liabilities divided by the total GDP. (World Bank, 2022a).
Good Governance Index	GG (LGG)	Indicates the overall quality of service delivery and public service performance. The index ranges from -2.5 to +2.5. (World Bank, 2022a)
Quality of Policy and Regulations Index	QOPR (LQOPR)	Level of the ability of government to formulate and implement effective policies and regulations to create an enabling environment. The index ranges from -2.5 to +2.5. (World Bank, 2022a).
GDP per capita	GDPC (LGDPC)	The GDP is divided by the total population. (World Bank, 2022b).
Domestic investment per capita (GFCF per capita)	GFCFC (LGFCF)	All improvements related to plant, machinery, and equipment purchases; Improvement of the public and private sector infrastructure. This study divided the total GFCF by the total population to calculate GFCG per capita. (World Bank, 2022a)

Source: World Government Bonds (2020); World Bank Development Indicators (2022a); World Bank Governance Indicators (2022b)

The ARDL model equation, as estimated, is listed as follows:

$$LRRI_t = a_0 + \alpha_1 LRRI_{t-1} + \alpha_2 LagLGOVDT_{t-1} +$$

$$\alpha_3 LagLGG_{t-1} + \alpha_4 LagLQOPR_{t-1} + \alpha_5 LGDPC_{t-1} + \alpha_6 LagLGFCFC_{t-1} \qquad (1)$$

Where $LRRI_t$ represents the change in the natural logarithm value of total RRI at time t; $LGOVDT_t$ denotes a change in the natural logarithm value of government debt at time t; LGG_t denotes a change in the natural logarithm value of the good governance index at time t, $LQOPR_t$, is the logarithm value of the quality of policy and regulations at time t, $LDGPt$ is the logarithm of the GDP per capita at time t, and $LGFCFC_t$ denotes a c, and in the natural logarithm value of the domestic investment rate at time t. The a_0 denotes the intercept, and n represents the optimum number of lags. The parameters α_i, i=1,2,3,4,5 indicate the long-run multipliers.

The econometric modelling process included the following steps: the Augmented Dickey-Fuller (ADF) tests were used to determine the level of stationarity or also known as unit root tests, the estimation of the possibility of long-run relationships using the Bound-test for cointegration, and included the estimation of error correction model and also testing for short-run relationships, Granger causality tests and lastly diagnostic and model stability tests. Regarding the Bounds test, the calculated F-statistic value is compared to the upper and lower critical values in the estimation. If the F-statistic is below the lower and upper bound, no cointegration exists between the variables. After confirmation of the long-run and cointegration via the Bounds-test, the error correction model (ECM) is estimated and includes short- and long-run dynamics. The ECM's coefficient must be negative, with a significant p-value, indicating convergence to equilibrium and cointegration between variables. Lastly, model diagnostic and stability checks were done by testing for robustness. Three tests were conducted to test for serial correlation, normal distribution and heteroskedasticity. Lastly, the CUSUM test was used to test the stability of the model.

Research Results and Discussion

Descriptive Analysis

The descriptive data are discussed based on the results in Tables 3 and 4 and Figures 1 and 2. Firstly, regarding the sovereign risk rating index, which has a maximum value of 20, Poland achieved its highest rating index of 19.4 in 2019 with a mean value of 18.8 over the study period, compared to SA, which achieved the best rating in 2008 of 18.5 with a mean value of 16.6. While Poland has a stable upward trending rating index at approximately 19.0, SA has a downward trending index with a 2021 rating index of 13.5. Secondly, Government debt as a percentage of GDP is analysed. The Polish Government's debt situation is under control mainly due to relatively high levels of economic growth. The mean value for government debt as % of GDP was 45.3%, with a 2021 value of 48% with a stable outlook. The SA situation is slightly different, with a mean value of 40.6% and a 2021 value of 70.6%, and the debt situation is worsening at an alarming rate. Concerning good governance, Poland has a slightly higher index of 0.69 in 2021 with a stable outlook, while SA has a 2021 index of 0.29 with a downward trending graph.

Regarding the quality of policy and regulations, Poland has a substantially higher index of 0.84 in 2021 with a stable outlook, while SA has a 2021 value of 0.21 with a negative trend. Regarding the two economic development indicators, Poland again has a superior environment. The 2021 GDP per capita values for the two countries are US$15500 (Poland) compared to US$5865 (SA). Therefore, the SA value is only 37.8% of the Polish value. The level of diversion between the two countries is best shown when the 1994 values are compared to the 2021 values. In 1994, the SA value was 87.6% of the Polish GDP per capita.

Regarding GFCF per capita, the 2021 values for the two countries are US$3291 (Poland) compared to US$815 (SA). Therefore, the SA value is only 24.8% of the

Polish value. The level of diversion between the two countries is best shown when the 1994 values are compared to the 2021 values. In 1994, the SA value was 70.6% of the Polish GDP per capita. SA has a downward trending domestic capital per capita environment, while the Polish situation has positive growth.

According to the Jargue-Bera test values, all variables are normally distributed, with values above 0.05. Regarding the Kurtosis values, all variables should have a value of below 3, thus indicating the data set has a limited tendency for outliers. In this case, a few of the variables contains outliers. In a novel descriptive analysis, Poland and SA were compared using the mean value for the six variables from the country with the highest indexes, namely Poland, as the baseline. The results of the same analysis are in brackets, but in this case, the 2021 data were used. The variables with values are listed below:

- RRI: 0.88 (0.69)
- GOVDT: 1.12 (0.57)
- GG: 0.85 (0.42)
- QOPR: 0.51 (0.25)
- GDPC: 0.56 (0.38)
- GFCFC: 0.47 (0.25)

The overall average index for South Africa, with Poland as a baseline, based on the mean values over the full period of the study, was 0.73. However, with the baseline using only 2021, the index declined to 0.43. This indicates the rapid progression of Poland versus the regression of SA on the various variables used in this analysis. This means, if using all six variables as equal weighting, regarding the sovereign risk ratings, governance and economic development factors, South Africa could be rated at approximately 73% of the Polish environment if the mean values of the 28 years of the study are used in the calculated or only 43% if 2021 is used as the year of comparison.

Table 2. Descriptive statistics (Poland)

	RRI	GOVDT	GG	QOPR	GDPC	GFCFC
Mean	18.82	45.25	0.62	0.82	9987	1936
Median	19.21	45.81	0.66	0.81	9954	2045
Maximum	19.50	60.34	0.83	1.06	15550	3290
Minimum	16.50	32.88	0.37	0.62	5271	842
Std. Dev.	0.82	5.12	0.11	0.14	3090	710
Kurtosis	4.52	4.87	2.78	1.73	1.86	1.84
Jarque-Bera	15.15	4.28	1.39	2.18	1.73	1.67

Source: Author's own calculations from data

Table 3. Descriptive statistics (South Africa)

	RRI	GOVDT	GG	QOPR	GDPC	GFCFC
Mean	16.58	40.55	0.53	0.42	5616	917
Median	16.58	40.54	0.47	0.41	5846	982
Maximum	18.50	70.56	1.02	0.80	6284	1199
Minimum	13.50	24.04	0.29	0.12	4619	596
Std. Dev.	1.40	11.66	0.21	0.17	616.64	213.67
Kurtosis	2.35	3.81	2.31	2.33	1.49	1.37
Jarque-Bera	1.48	4.88	2.17	0.82	3.38	3.15

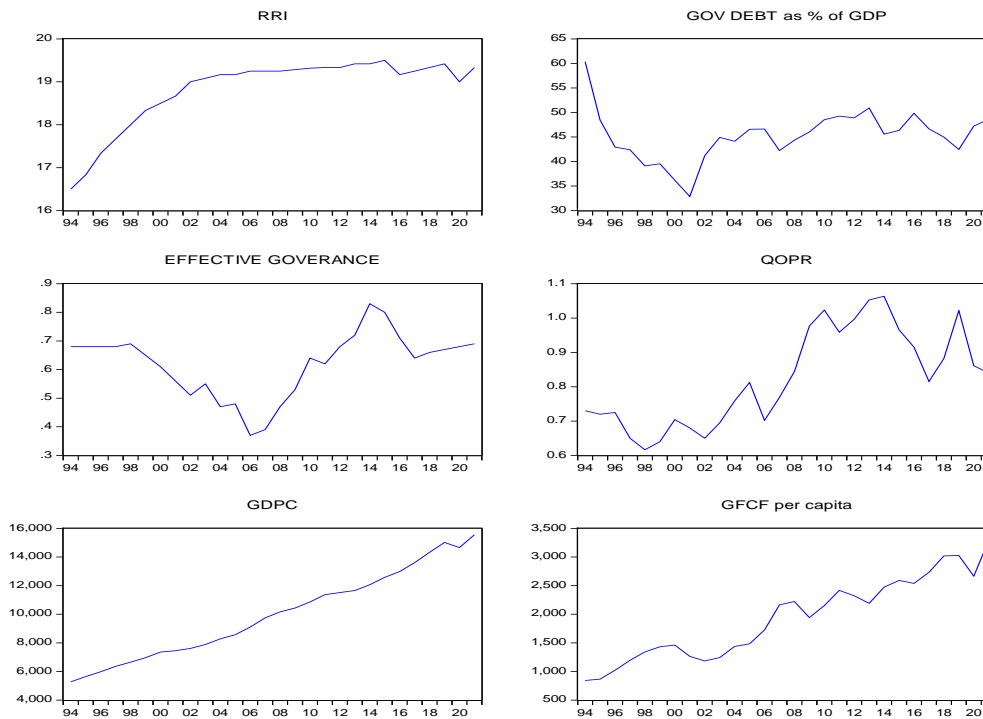Source: Author's own calculations from data

Figure 1: Poland Trends
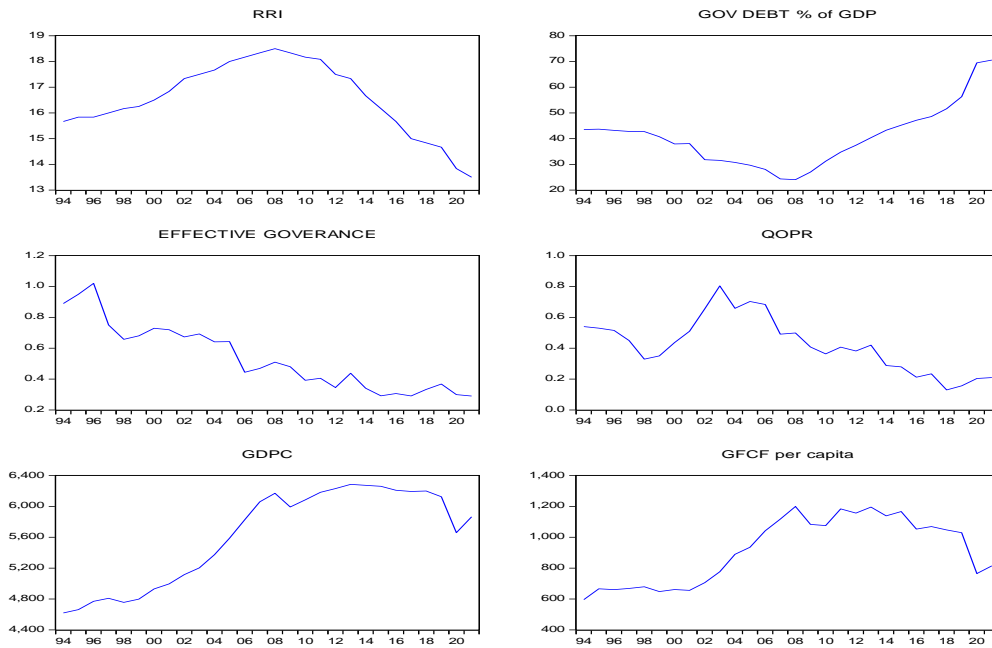**Source:** Author's own analysis from data

Figure 2: SA trends
Source: Author's own analysis from data

Unit Root Tests

The unit root test results are listed in Table 4. The Augmented Dickey-Fuller (ADF) test completed the unit roots estimations. The tests indicated a mixture of stationarity for both countries, with variables presenting both stationarity on levels and I(1). The results of the unit root tests indicated that an ARDL model was best suited for this study.

Table 4. Unit root tests

Poland				South Africa		
Variables	**Stationarity**		**Result**			**Result**
	ADF levels I(0)	**ADF 1st difference I(1)**		**ADF levels I(0)**	**ADF 1st difference I(1)**	
LRRI	0.0455*	0.0319*	I (0)	0.0183*	0.9412	I (0)
LGOVDT	0.0316*	0.0019*	I (0)	0.8536	0.0472*	I (1)
LGG	0.6415	0.0034*	I (1)	0.7336	0.0003*	I (1)
LQOPR	0.5774	0.0009*	I (1)	0.7676	0.0002*	I (1)
LGDPC	0.0820	0.0013*	I (1)	0.3645	0.0067*	I (1)
LGFCFC	0.9290	0.0001*	I (1)	0.4271	0.0008*	I (1)

Note: *denotes the rejection of the null hypothesis of unit root at the 5% significance level

Bounds Tests and Long-Run Results

The lag length selection was estimated after selecting the econometric model based on the ARDL methodology. During the lag length selection estimation, all three selection criteria indicated a lag of one (1). The Akaike information criterion indicated the selected and best-performing model for Poland as 1,1,0,0,1,0 and for SA as 1,0,0,0,0,1.

Following the lag length selection process, the next step in the econometric methodology was the Bounds test for possible cointegration and long-run relationships between the variables. For Poland, the F-statistic was 4.8645 with an upper bound value of 5.0 per cent significance at 3.38. For South Africa, the F-statistic was 6.5134, with an upper bound value of 5.0 per cent significance at 4.43. Based on the above-listed estimation results, it could be concluded and confirmed that long-run relationships do exist between the variables selected in the model for both countries. Long-run models with similar and, in some cases, different variables were also estimated in studies by Cantor and Packer (1996), Bayar and Kilic (2014) and Asongu et al. (2018). Equation (2)(Poland) and equation (3)(SA) present the long-run relationships for both countries:

Poland: *LRRI = - 0.219*LGOVDT + 0.027*LGG + 0.089*LQOPR + 0.066*LGDPC + 0.056*LGFCFC*……………………………………………………………………….(2)

SA: *LRRI = - 1.224*LGOVDT + 0.536*LGG + 0.313*LQOPR + 1.889*LGDPC + 1.331*LGFCFC*……………………………………………………………………….(3)

From equation (2) the long-run regression for Poland, all coefficients are positive and relatively low except for LGOVDT, which has a coefficient of -0.22. LGOVDT, therefore, has the highest long-run impact on the dependent variable. The prediction, estimated in the model, is that a 1% increase in LGOVDT, could lead to a decrease of 0.22% in LRRI. This result found in the case of Poland is similar to results of studies done by Chiu and Lee (2017) where the increase in public debt had a negative impact on both economic growth and risk ratings. These results were also confirmed by Afonso et al. (2011). Although all the other variables have long-run impacts on LRRI, the impact is relatively low in the risk rating indexes. From equation (3), the regression analysis for SA, the results are slightly different for this developing country. The coefficients are much higher if compared to the results in the Polish regression. All the variables have a positive impact except for LGOVDT, while LGOVDT, GDPC and LGFCFC have coefficients above 1.0. LGDP has the highest coefficient of 1.89, followed by LGFCF with 1.33. This means that if LGDP increases by 1%, LRRI could increase by 1.89%. Chen et al. (2016) found similar results and a strong positive relationship between economic growth and improved risk ratings.

ECM and Short-Run Results

Table 5 lists both countries' error correction model (ECM) and short-run results. The ECM for both countries indicates and confirms the long-run relationship between the variables included in the model. The ECM test results for both countries are negative and significant, as indicated in Table 5. Regarding the short-run results, all independent variables have a positive short-run relationship with the dependent variable (LRRI), except for LGOVDT. But it is important to note that not all variables have a significant short-run impact. In the case of Poland, only LGOVDT and LGDPC have significant impacts on LRRI, with LGDPC having the highest coefficient of 0.29. For SA, a different result was estimated. All independent variables except for LGOVDT have a positive and significant short-run impact on the dependent variable. LGDPC had the highest significant impact on the dependent variable, with a similar coefficient of 0.103.

Table 5. Short-run relationship and error-correction results

Poland				SA		
Variable (D(LRRI is the dependent variable)	**Coefficient**	**Std. Error**	**P-value**	**Coefficient**	**Std. Error**	**P-value**
D(LGOVDT)	-0.039	0.021	**0.071****	-0.067	0.015	0.412
D(LGG)	0.005	0.011	0.653	0.029	0.009	**0.003***
D(LQOPR)	0.016	0.017	0.364	0.017	0.009	**0.006***
D(LGDPC)	0.292	0.110	**0.016***	0.103	0.031	**0.067****
D(LGFCFC)	0.010	0.019	0.5924	0.073	0.024	**0.003***
CointEq(-1)*	-0.6111	0.0604	**0.003***	-0.056	0.004	**0.001***

Note: *rejection of null hypothesis at 5% significance level; **rejection of null hypothesis at 10% significance level

Granger Causality

Tables 6 (Poland) and 7 (SA) summarise the Granger causality tests for the two countries. This type of analysis uses variables as dependent or independent variables, although this study focuses on the RRI as a dependent variable. The results for Poland indicate that RRI also does cause changes in GOVDT, while QOPR does cause shocks or changes in the RRI. Also, GDPC does cause changes in the RRI; on the other hand, the RRI does cause changes in GFCFC.

The results for SA differ significantly from that of Poland. The SA environment results indicate that the other variables mostly impact the dependent variable. For example, GOVDT does cause changes in the RRI, the same with GG and QOPR, GDPC and even GFCGC. Bi-directional causality was also estimated between the dependent variable, QOPR, GDPC, GFCFC, and the dependent variable. Similar results were estimated by Meyer (2021) for the Visegrad four countries.

Table 6. Granger Causality Test results (Poland)

Null hypothesis	F-stat	p-value
GOVDT does not granger cause RRI	0.7051	0.5054
RRI does not granger cause GOVDT	2.8971	**0.0774****
GG does not granger cause RRI	2.1834	0.0829
RRI does not granger cause GG	0.1443	0.8660
QOPR does not granger cause RRI	1.9318	**0.0971****
RRI does not granger cause QOPR	1.7756	0.1939
GDPC does not granger cause RRI	3.9757	**0.0343***
RRI does not granger cause GDPC	1.2367	0.3107
GFCFC does not granger cause RRI	1.6267	0.2204
RRI does not granger cause GFCFC	2.5873	**0.0990****

Note: *rejection of null hypothesis at 5% significance level and ** rejection at 10% level

Table 7. Granger Causality Test results (SA)

Null hypothesis	F-stat	p-value
GOVDT does not granger cause RRI	1.9263	**0.0921****
RRI does not granger cause GOVDT	0.5738	0.5720
GG does not granger cause RRI	3.7658	**0.0400***
RRI does not granger cause GG	0.3868	0.6839
QOPR does not granger cause RRI	2.9379	**0.0750****
RRI does not granger cause QOPR	2.4710	**0.0924****
GDPC does not granger cause RRI	7.6181	**0.0033***
RRI does not granger cause GDPC	5.2351	**0.0143***
GFCFC does not granger cause RRI	9.4177	**0.0012***
RRI does not granger cause GFCFC	8.0059	**0.0026***

Note: *rejection of null hypothesis at 5% significance level and ** rejection at 10% level

Diagnostics

Various diagnostic and stability tests were performed to determine the appropriateness and stability of the models and methods used in the study. The was performed to test for serial correlation and the normal distribution test for the. The results indicated that the residuals were not auto-correlated using the Breusch-Godfrey LM Test. At the same time, the series was tested via the Jarque-Bera Test and found to be normally distributed. The Breusch-Pagan-Godfrey test was used to test for heteroscedasticity, and the series was found to be homoscedastic. Also, the model was tested for stability using the CUSUM test. The results confirmed a stable model. These results confirm that the findings, as estimated, are trustworthy.

In further discussion and conclusions, the findings from this study contributed to the body of knowledge regarding risk ratings and management of the economy through effective policy implementation. Sovereign risk ratings of governments equate to the overall assessment of the level of management and creditworthiness of the specific government. International risk ratings play a major role in decision-making by investors. Governments need to have strategies how to have stable and good risk

ratings. This will ensure investment, which will lead to economic growth, but requires quality institutions and governance (Hanusch et al. 2016).

Conclusion

The significance of country risk rating agencies' decisions has grown in importance over the last few decades. The sovereign risk rating of a country determines the ease of obtaining government loans, but it also determines the level of investment in the economy. High-risk levels repel investment and, ultimately, economic growth and development.

This study had the goal, via comparative analysis, to determine the relationships between risk rating indexes and the level of good governance, economic performance and investment. The empirical analysis, the literature review, and the econometric results estimated in this study determined long-run relationships between the dependent variable, namely the sovereign risk rating index, and independent variables, which included good governance, economic performance and investment. The most important results, as estimated, are that risk ratings are significantly affected by all the independent variables. This study's findings present implications for policy formulation and certainty, including economic and investment policy. Good governance and especially the monetary policy of South Africa are important issues. The stimulation of economic growth and development, as well as investment, is required to improve government debt and fiscal policy. This situation will allow for improved risk ratings and a favourable investment environment. In the South Africa case, with a non-investment ("Junk" status) rating grade, the country still needs to find a way to attract investment and improve the rating index. The government will have to change its policy outlook to be more efficient in the use of resources. This could attract investment leading to renewed growth and eventually improved ratings.

As with most research projects, this study also has some limitations, mostly related to the availability of extensive time series data sets. Future studies will add different variables or predictors which affect country risk ratings, and more comparative studies are also planned on different continents and country groupings.

Developing countries must find ways to attract more investment, eventually leading to higher growth. This will ultimately lead to improved sovereign risk ratings. The achievement of investment-grade ratings will assist in more inflow of investment, allowing governments to increase their revenue and more access to loans supporting growth and development. Future studies will include a more in-depth analysis of developing countries with comparisons and alternative variables such as the economic, management, governance and rating environments.

In conclusion, the implications of this study from a management point of view is that many factors influence the sovereign risk rating of a country. Through effective and good governance principles, these factors could be managed to ensure a stable economic and political environment. One of the most important aspects, as highlighted in the literature review section that could be avoided through effective

management is policy uncertainty (Irani et al. 2022), which is one of the major reasons for poor risk ratings. On the other hand, high and stable risk ratings usually translate to a positive investment environment and ultimately lead to economic growth and development.

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ZWIĄZKI MIĘDZY RATINGAMI RYZYKA PAŃSTW, ŁADEM KORPORACYJNYM, WYNIKAMI GOSPODARCZYMI I INWESTYCJAMI KRAJOWYMI: LEKCJE ZARZĄDZANIA I POLITYKI Z POLSKI I AFRYKI POŁUDNIOWEJ

Streszczenie: Znaczenie ratingów ryzyka państw stało się kluczowe dla zarządzania inwestycjami i ładu korporacyjnego oraz polityki. Agencje ratingowe odgrywają kluczową rolę na rynkach finansowych i rynkach ryzyka. W artykule przeanalizowano związki między ratingami ryzyka, zarządzaniem, wynikami gospodarczymi i inwestycjami w oparciu o analizę porównawczą między Polską a Republiką Południowej Afryki. Te dwa kraje obrały różne ścieżki rozwoju, odpowiednio jako kraje rozwinięte i rozwijające się. W badaniu przyjęto ilościowe podejście badawcze, wykorzystując dane z lat 1994-2021. Analiza

obejmowała analizę opisową i ekonometryczną dla obu krajów. Wyniki ujawniają znaczące różnice między tymi dwoma krajami. Polska osiągnęła lepsze wyniki niż Republika Południowej Afryki, która w 2021 r. osiągnęła w przybliżeniu tylko 43% wyników Polski i tylko 73% w całym badanym okresie. Oszacowano zależności długoterminowe, przy czym zmienną zależną był sformułowany wskaźnik oceny ryzyka. Współczynniki w południowoafrykańskim modelu długookresowym były znacznie wyższe niż w przypadku Polski. W przypadku Polski największy wpływ na zmienną zależną miał poziom długu publicznego, natomiast w przypadku RPA największy wpływ miał poziom wzrostu PKB. Nowatorstwo artykułu polega na unikalnym połączeniu zmiennych dotyczących zarządzania, zarządzania ryzykiem i gospodarki. Wyniki sugerują, że zarządzanie z dobrym zarządzaniem, wyniki gospodarcze i poziom inwestycji znacząco wpływają na indeksy ratingu ryzyka państwowego krajów. Decydenci polityczni muszą zapewnić wysoki poziom zarządzania, dobre rządy i odpowiednie zarządzanie długiem publicznym. Ponadto należy zapewnić ciągłość polityki w celu przyciągnięcia inwestycji poprzez utrzymanie stabilnych ratingów ryzyka.

Słowa kluczowe: wyniki gospodarcze; dobre zarządzanie; inwestycje; Polska; rating ryzyka państwa; RPA